

# Hammin' It Up



## MEGAN News

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### What's in a name?

With Sid Bishop—KB4QKZ called as the Stake Emergency Communications Director we're going to expand our audience to all 47 of the Marietta, GA—East Stake LDS radio ops as well as

some other interested parties. We'll now have a newsletter of wider focus. The pledge is the same: To provide you all with articles that will be informative, practical and, hopefully, interesting.

### The "Stink pipe Stinger" - Part 2

Last issue we addressed the making of the "Stinger" portion of this enclosed 450 Ohm ladder line J-Pole antenna project. This month we'll address "the rest of the story" looking at the "Stink Pipe" portion of the project. We'll first describe briefly a simple mount for portable use that assembles and breaks down easily for transport. It's a snap so let's talk about how you can set up a this neat inexpensive 2 Meter antenna almost anywhere you want.

For portable field operations or class room demonstrations I have devised a simple collapsible PVC tubing base and mast assembly. I use more of the 1 inch schedule 40 PVC pipe and make an H shaped base with a T connector in the middle of the cross bar to accommodate a mast made of, you guessed it, 1 inch PVC pipe. I generally keep the mast section limited to 5 feet or so. Here's a picture of the base and a mast in it:



Nothing is glued here because I want to break it all down for packing and easy transport.

Well, all this is just great but where's the "Stink Pipe" bit come in? Well, this is simple enough. I simply use appropriate PVC pipe adapters to mate the antenna to whatever vent pipe is found on a dwelling. This approach has worked very well in setting up good functional antennas for 2 Meter operations at minimal cost. It gets these new hams on the air easily without going into their jeans for the cost of a regular base antenna. Here's how I did a couple different installations.

First we'll look at an adapter that I made for a smaller vent pipe. This first picture shows the components.



At the far left is a short piece of 1 inch PVC pipe that would actually be a

longer pipe to serve as the mast going into the base of the T connector. At the far right is a shorter piece of 2 inch pipe to represent the vent pipe that comes through the roof.

In between these short pieces of pipe are, from left to right, a 2 inch to 1 inch reducer, a plastic baffle that I cut out of the bottom of a plastic cup (just wait a bit and I'll tell ya' why) and the 2 inch T connector. I use the T connector to ensure that the vent pipe continues to vent but this time it goes out the side.

The plastic baffle is cut to snugly fit inside the T and is positioned at the base of the reducer. It will be glued in place. Its purpose is to ensure that no moisture from the external elements or the vent pipe find their way up into the antenna. The reducer does just that. It adapts the 1 inch PVC mast for the antenna to the T connector. It also will be glued in place. Here's the adapter assembly together.



A short piece of 1 inch pipe was used for this particular install and it is glued in place. The reducer is glued into the T connector too. Note the black ring inside the adapter. That's the glue used to hold the baffle in place. On the next page is what it looks like actually installed on the vent pipe.

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Before the adapter was placed on the vent pipe I smeared a bit of light grease on the vent pipe. This will allow for easy disassembly should the need arise. Finally, what does the whole thing look like installed? Here's one that installed on my roof. No expensive mounts or



hardware needed. Just the rear deal. Again, don't glue any downward facing joint. The glue is used not only to hold parts together but to act as a weather seal. If a joint faces down then it's not likely going to provide a path for moisture to invade a space.

Finally, let's take a quick look at an installation for a large vent pipe. It's really more of the same but just on a larger scale. The next column shows the components all lined up. On the left is a T connector representing the base of the "Stinger" antenna. Next is a short section of mast pipe. I used a plastic cup as a shroud to cover the bottom of the mast and the reduc-

ers. These reducers had slots around the perimeter which could hold water in them. I wanted to prevent that in case



there was any chance of freezing (Yeah, I know it's Fall NOW) and cracking the component parts. Also, the cup is has slight aesthetic purposes. Big deal! Next is the baffle made from the bottom of one of those cups again. And, finally, a large T connector to fit the vent pipe involved. This shot shows the parts assembled.

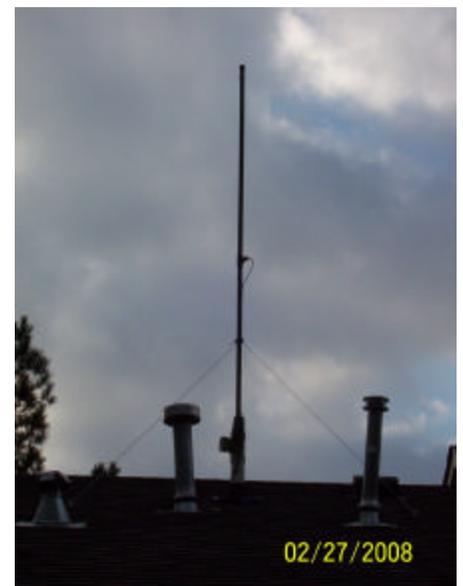


The next column shows the shroud in place. Of course, if you don't like creamy yellow you can select any color you desire or paint the thing any way you like. I would point out though that you should **not** paint the antenna itself. Doing so will change the operating frequency. The dimensions used here were arrived at specifically using 1 inch schedule 40 PVC pipe. Any substitutions or finish on the radome will change frequency. Design adjustments would be needed if a finish was to be



applied to the outside surface of the radome.

Now here's the completed installation. In this case a 4 foot mast was used between the adapter and the base (T connector) of the "Stinger". To provide added stiffness I inserted a 1 inch wood dowel inside the mast piece gluing it in place by coating it with Gorilla Glue as I rotated it into the PVC pipe mast. The glue expands and takes up any slight space between the dowel and the inside wall of the pipe.



This makes for a good stiff mast. In addition it was decided to guy the mast

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for added measure.

This particular installation works quite well for Paul - KJ4AFF as he contends with his condo being down in a hole and surrounded by some hills and structures. He still is able to hit the K4UFO repeater quite well with no line of sight using just his HT; a Kenwood TH-F6.

Whew! Finally! Well there you have it folks. A relatively simple idea that turned into a multi-use project for sure. Now, I'll admit that I've left out some things like checking the antenna with an analyzer as I do for each one. Also, while this model will operate as designed on 2 Meters it will also operate on some 440 frequencies as well but its performance is limited on that band as the VSWR fluctuates widely across the band. I'm working on a dual band model but I haven't quite got the bugs out of it to my satisfaction. More later about that effort, I hope.

You may just want to give this a try. It really isn't that hard to do. There's nothing like doing a project like this that 1.) is sure to be a learning experience and 2.) almost sure to work well to really give you a boost. "Holy cow! It works!" is one of the greatest phrases around.

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## Spotlight On Our Ops

The Marietta East Stake has built its' compliment of amateur radio operators from the 2005 number of 19 to its' present level of 47. Well, just who are these folks that have taken the challenge to become more prepared and develop a new skill? With this issue we begin a new feature of introducing you to your Brother and Sister "Hamsters" & "Hamsterettes". We'll be making the rounds getting acquainted with you folks and maybe featuring your unique approaches to the emergency communications game. Well, me being an old fashioned guy we'll introduce a lady first. This issue will be a visit to the home

of Lisa Vish of the Hickory Flat Ward. She is one of 5 sister licensed operators. **(These sisters comprise 26% of the total 19 operators in that Ward!)** Having passed her licensing exam she made sure that Santa dropped off an Icom 208H and antenna for Christmas that year as he buzzed around the world. Next came the question of where she would put the radio. Lisa is a resourceful gal and along the way had acquired a pine armoire from a friend; FOR FREE. It was located in an ideal spot on the main floor where most of her activity was at home and where she could get to it. It wasn't used except to store some of her son's games so an extra shelf was fabricated, a few holes drilled in the back panel for cables and the gear was installed. The timing wasn't right to put up her Diamond VHF/UHF antenna outside so a local metal shop was contacted to make up a sheet of steel the same size as the top of the armoire. On top of this was placed a mag mount MFJ-1724B antenna. She was in business and that's how she operated for a year. Here's a picture of the "Armoire Shack".



The antenna is there in behind the fake plant. All this worked like a charm.

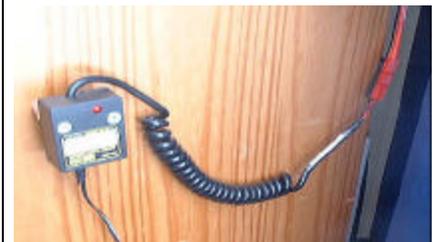
Over time there have been a few changes. The full size antenna has been mounted on the roof and a backup battery arrangement has been installed with a trickle charger to keep it topped off. The whole thing is convenient, clean and neat and can be closed up so that you wouldn't even know what was going on. And, son Roman still has storage space for his stuff in the bottom! Mom can function

in the home and do her calling as Relief Society President and still get in on any radio action easily. Oh yeah, by the way, her husband, George, followed Lisa's example and got his ticket also.



Here she is at her operating position and the backup battery can be seen in the back corner of the cabinet. All her frequency tables and notes are at hand and she is ready to go.

The sisters in this Ward have been some of the more enthusiastic operators and often squeeze in time to check in and support our weekly VHF repeater net. Some of these sisters have also been noted by other county amateur radio operators as being clear and efficient in their reports when they would get involved in Skywarn watches and county EOC activations during some of the storms that rolled through Cherokee county in the Spring and Summer.



Here's a picture of the trickle charger that's used to keep the backup battery fully charged between uses. It is a simple unit available through Harbor Freight Tools on Bells Ferry Rd.

The unit is mounted on the side of the armoire so that it can be easily monitored. Some TV cable F type connectors were modified and used as standoffs to provide a bit of ventilation room around the unit. Switching from the power supply to backup battery is a simple switch of connections using the Anderson Power Poles seen at the right.

Thanks Lisa for allowing the visit!

Hmmmm. Now who's the next subject going to be?

## Techniques & Tips

I make up virtually every coax cable that I use and over the years I have, on occasion, had a couple problems. These have 1.) centered around the soldering of the PL259 connector and shield braid through the four holes that are on the body of the plug or 2.) a short developing between the center conductor and the shield/ground. It takes a fair amount of heat to solder the plug together through those 4 holes and real care needs to be taken so as not to 1.) melt the interior insulation or, 2.) in the case of non solid center conductor cables, have strands of the center conductor fold back and short out the connector. There are a couple of techniques that work but they sometimes can border on being an art form and I have a better way. Let's just address one process in dealing with RG-8X cable that is a bit easier and less problematic .

I have a little trick that I use in working with RG-8X and using the standard UG-176 reducer with the PL-259s.

Here's the process with photos:

**First**, slip the reducer and outer sleeve of the connector over the RG-8X. Don't forget this part. For sure, it **will** happen to you at some time. Then you'll remember.

**Second**, carefully cut back both the outer jacket and shield of the cable such that you wind up with about 1.5 inches of the center conductor exposed.

**Third**, cut back the outer jacket to expose the shield for about 1/4 inch.

**Fourth**, fold the shield braid out perpendicular to the central axis of the cable and separate the strands as evenly as you can.

**Fifth**, slide the reducer forward to the braid and, using a sharp pair of scissors (your own and not your



wife's sewing scissors) trim the shield wires so that they do not extend beyond the outer circumference of the reducer end. A very slight overlap is OK at this point but you'll just wind up trimming it off later so keep a tight tolerance.



**Sixth**, carefully solder the braid to the end rim of the reducer all the way around the circumference. Try not to melt the center insulation any. It will take practice to develop this skill. Examine your work in particular noting the condition of the center insulation.



**Seventh**, examine the center insulation and, if needed, remove enough to leave 3/16 inch protruding.

**Eighth**, carefully slide the PL259 into place sliding the cable center

conductors through the center pin. As you do this you will also be threading the PL259 body over the threads of the reducer. This is where you will find that any extra shield material extending beyond the reducer end may bind against the inside of the PL259. There can be some friction because of this without a problem but if it is excessive do the clean up.

Once everything is assembled



finger tight you can firm up the connection between the reducer and the shell of the PL259 using a couple sets of pliers. One on the reducer end and another on the PL259 serrated rings. Try not to mar the parts. This does not need to be gorilla tight.

**Ninth**, trim back the center conductor extending out of the PL259 center pin so that it doesn't extend any more than 1/32 inch beyond the end. At this point you can solder the



center conductor to the pin allowing some solder to wick back flowing into the pin interior a bit. Don't overdo it though.

There you have it. It's a cinch really!